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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/020,062
Filing Date: October 30, 2001
Appellant(s): LINEBARGER ET. AL.

Kyle J. Way
For Appellant

SUPPLEMENTAL EXAMINER'S ANSWER

This is in response to the appeal brief filed September 13, 2006 appealing from the Office action mailed June 12, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A substantially correct copy of appealed claims 13, 16-17, 21, 51 and 56 appears on pages 12-13 and 15-16 of the Appendix to the appellant's brief. The minor errors are

as follows: the objected and allowed claims 13, 16-17, 21, 51 and 56 should be included in the Appendix.

(8) Evidence Relied Upon

5,694,414	Smith et al.	12-1997
6,873,607	Hamada et al.	3-2005
6,940,824 B1	Shibutani; Akira	3-2006
6,892,068 B2	Karabinis et al.	5-2005
6,952,434 B1	Jagannatharao et al.	9-2005

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 23-28, 41-48 and 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Smith et al, US Patent No. 5,694,414, hereinafter referred to as Smith.

Regarding claim 1-2, 6, 8, 28 and 41-42, Smith discloses a method and system called "Multi-band, multi-mode spread-spectrum communication system." Smith discloses the system, which is integrated in a single handset 410 (fig. 8), uses more than one frequency band, wherein selectable frequency bands include both licensed

and unlicensed frequency bands, particularly frequency bands including the 1850-1990 MHz (licensed), and 2.4-2.4835 GHz (unlicensed) frequency bands (abstract, fig. 8, col. 14, lines 38-40). The system comprising:

a transmitter (fig. 2) and a receiver (fig.3), wherein the transmitter comprises a narrowband modulator 113 for transmitting unlicensed spectrum band and the receiver comprises a narrowband demodulator 213 for receiving unlicensed spectrum band. It indicates that the telephone handset 410 comprises an unlicensed spectrum transceiver;

the transmitter comprises a spread spectrum modulator 111 for transmitting licensed spectrum band and the receiver comprises a spread spectrum despread 215 for receiving licensed spectrum band. It indicates that the telephone handset 410 comprises a licensed spectrum transceiver; see abstract, fig. 2-3 and 8-10, col. 3, lines 8-18, col. 14, lines 38-40; and

a mode controller 103 to control licensed and unlicensed frequency bands for communication; see fig. 2-3, col. 6, lines 46-55.

Regarding claims 3 and 43, in figure 8 Smith discloses the dual transceiver device 410 provides access to a select one of the plurality of sub-bands 402 in the first bandwidth 400 (licensed), and may be switched to provide access to a select one of the plurality of sub-bands 406 in the second bandwidth 405 (unlicensed); see col. 14, lines 48-52.

Regarding claims 4 and 44, the controller 103 in the receiver (fig. 3) configured to receive a communication from both licensed and unlicensed frequency bands; see abstract, fig. 2-3 and 8-10, col. 3, lines 8-18, col. 14, lines 38-40.

Regarding claims 5 and 45, in figure 8 Smith discloses the dual transceiver device 410 provides access to a select one of the plurality of sub-bands 402 in the first bandwidth 400 (licensed), and may be switched to provide access to a select one of the plurality of sub-bands 406 in the second bandwidth 405 (unlicensed), col. 14, lines 48-52.

Regarding claims 7, 9-10, 46-48, in figure 8 Smith discloses the dual transceiver device 410 provides access to a select one of the plurality of sub-bands 402 in the first bandwidth 400 (licensed), and may be switched to provide access to a select one of the plurality of sub-bands 406 in the second bandwidth 405 (unlicensed), col. 14, lines 48-52.

Regarding claims 23 and 55, Smith discloses the transmitter (fig. 2) comprises modulators 111 and 113, and the receiver (fig. 3) comprises demodulators 213 and 217. Moreover, the transmit information processing 101 (fig. 2) inherently comprises an encoder to encode information for transmission, and the received information processing 219 (fig. 3) inherently comprises a decoder to decode the received information.

Regarding claim 24, Smith discloses the system comprises base stations and frequency ranges, see fig. 4-5 and 7.

Regarding claim 25, Smith discloses the system comprises a dual band antenna 109 for transmitting and receiving frequency bands.

Regarding claims 26-27, in figure 8, Smith discloses a transceiver device 410 for transmitting and receiving information to/from the system.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-12 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414, in view of Hamada et al., US Patent No. 6,873,607, hereinafter referred to as Smith and Hamada respectively.

Regarding claims 11-12 and 49, Smith does not discloses the spectrum selector is configured to select a first spectrum for operation and to select a different spectrum for operation if an interference event occurs for the first spectrum. However, Hamada discloses a system and method called "Interference detection method and an interference avoidance method." Hamada teaches that the interference in the R channels through which the subscriber stations (21 to 24) issue a call request to the base station (1) can be detected precisely, and time slot arrangement of the R channels is changed by detecting the interference to thus avoid the interference, abstract, fig. 4-12, col. 1, line 57-col. 2, line 9, col. 3, lines 49-62. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Hamada's method

into the system disclosed by Smith in order to improve the quality of services and customer service because of changing the interference channels.

Claims 14-15 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414, in view of Shibutani, US Patent No. 6,940,824 hereinafter referred to as Smith and Shibutani respectively.

Regarding claims 14 and 50, Smith does not disclose the spectrum selector is configured to select a first spectrum for transmission of at least one communication for a guaranteed service. However, Shibutani discloses method and system called "Slot Assignment Algorithm." Shibutani teaches that the algorithms guarantee the minimum service to access terminals with poor channel conditions by allocating at least one slot group to each of access terminal groups with poor channel conditions. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Karabinis's method into the system disclosed by Smith in order to improve quality of service and customer service as mentioned above with respect to claim 11.

Regarding claim 15, since Shibutani discloses the system supports mobile telecommunication 3rd generation and beyond. It indicates the system uses licensed frequency bands.

Claims 18-20 and 52-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414, in view of Karabinis et al., US Patent No. 6,892,068 B2, hereinafter referred to as Smith and Karabinis respectively.

Regarding claims 18-20 and 52-53, Smith does not disclose the spectrum selector is configured to select a first spectrum for operation and to select a different

spectrum for operation if a capacity event occurs for the first spectrum. However, Karabinis discloses a method and system called "Coordinated satellite-terrestrial frequency reuse." Karabinis teaches that if channels associated with one particular spot beam get too congest the system borrows or reuse frequency spectrum from other spot beams that have available capacity; fig. 8s, col. 20, line 46-col.21, line 61. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt Karabinis's method into the system disclosed by Smith in order to improve the quality of services because the system avoids congestion.

Claims 22 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al, US Patent No. 5,694,414 as shown above, in view of Jagannatharao et al., US Patent No. 6,952,434 B1, hereinafter referred to as Smith and Jagannatharao respectively.

Regarding claims 22 and 54, Smith does not discloses the system configured to process a communication with an inverse multiplexing asynchronous transfer mode (IMA) protocol. However, Jagannatharao discloses the system, which comprises IMA group devices 150 and 106. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Jagannatharao's IMA protocol into the system disclosed by Smith in order to speed-up the system since the IMA allows high-speed streams of ATM cells to be broken up and be transmitted across multiple T1/E1 communication links.

(10) Response to Argument

Appellants' arguments regarding the art rejections are not persuasive for the following reasons:

Pages 5-6, the section (a) of the argument, Appellants argue, "[E]ach of the transmitter and receiver of Smith only provide for a single transmitter or receiver capable of switching between narrowband and spread-spectrum modes, not two separate transceivers, one for licensed spectrum, and another for unlicensed spectrum, as provided for in claims 1 and 41." Examiner respectfully disagrees. Appellants are direct to figures 2-3 and 8, wherein Smith discloses the telephone handset 410 comprises a narrowband modulator 113 (fig. 2) for transmitting unlicensed spectrum band and a narrowband demodulator 213 (fig. 3) for receiving unlicensed spectrum band. It indicates that the telephone handset 410 comprises an unlicensed spectrum transceiver, therefore. Similarly, the telephone handset 410 comprises a spread spectrum modulator 111 for transmitting licensed spectrum band and a spread spectrum despread 215 for receiving licensed spectrum band. It indicates that the telephone handset 410 comprises a licensed spectrum transceiver, therefore. Consequently, the telephone handset 410 comprises two transceivers: licensed transceiver and unlicensed transceiver.

Also, pages 6-7, Appellants argue that Smith's system is a dual mode transceiver, not two separate transceivers. Examiner respectfully disagrees. The claims 1 and 41 did not recite any limitation that indicates the licensed transceiver and the unlicensed transceiver are separate transceivers.

Page 7, Appellants argue the two modes disclosed by Smith "do not correspond with "licensed spectrum" and "unlicensed spectrum," as provided for in claims 1 and 41." Examiner respectfully disagrees. First, Smith discloses the transmitter and receiver illustrated in figures 2 and 3, respectively, implement dual band and dual mode transmitter and receiver (abstract, col. 7, lines 60-61). Secondly, Appellants are direct to figure 8 that shows a dual mode handset phone 410 may operate in both licensed spectrum 400 and unlicensed spectrum 405. Furthermore, the abstract introduces the system *"uses more than one mode and more than one frequency band. Selectable modes include narrowband mode and spread-spectrum mode, or cellular mode and microcellular mode. Selectable frequency bands include both licensed and unlicensed frequency bands, particularly frequency bands including the 902-928 MHz, 1850-1990 MHz, and 2.4-2.4835 GHz frequency bands."* And col. 3, lines 8-14, Smith discloses, *"Another aspect of the invention provides a technique for spread-spectrum communication which uses more than one frequency band, particularly unlicensed frequency bands, including the 902-928 MHz, 1850-1990 MHz, and 2.4-2.4835 GHz frequency bands, and including the 1910-1930 MHz frequency band or other future unlicensed frequency bands."* One ordinary skill in the art knows that 1850-1990 MHz and 1910-1930 MHz are licensed frequency bands, and 2.4-2.4835 GHz is are unlicensed frequency bands. Thus, the transmitter disclosed by Smith transmits both licensed frequency bands and unlicensed frequency bands, and the receiver disclosed by Smith receives both licensed frequency bands and unlicensed frequency bands.

Pages 7-8, the section (b) of the argument, Appellants argue, "according to Smith, the mode controller 103 selects between narrowband and spread-spectrum modes in both the transmitter and receiver. (Column 6, lines 47-55; and column 7, lines 37-50.) Thus, the mode controller 103 is not configured to select a licensed transceiver and an unlicensed transceiver". Examiner respectfully disagrees. As explained above, Smith discloses the transmitter and receiver illustrated in figures 2 and 3, respectively, implement dual-band and dual-mode transmitter and receiver (abstract, col. 7, lines 60-61), wherein the dual-band are licensed frequency bands and unlicensed frequency bands. See abstract, col. 3, lines 8-14, col. 14, lines 2-8 and 38-40. Therefore, the mode controller 103 controls a mode selected switch 104 switches to operate in licensed frequency bands or unlicensed frequency bands.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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